

## CLAIMS

- 5     1. A portable printer comprising:  
        a top cover having an inside surface;  
        a bottom cover having an inside surface on which media is positionable;  
        one or more rail units disposed on the inside surface of the top cover; and  
        a carriage assembly movably connected to the one or more rail units such  
10    that the carriage assembly is able to move at least one of horizontally and  
        vertically over the media, and print on substantially any part of the media,  
        wherein the media is capable of being stationary during printing.
2. The portable printer of claim 1, wherein the carriage assembly comprises:  
15    a carriage unit;  
        a print head disposed on a bottom surface of the carriage unit;  
        a motor coupled to the carriage unit to move the carriage assembly  
        horizontally; and  
        a mechanism coupled to the carriage unit to move the carriage assembly  
20    vertically.
3. The portable printer of claim 2, wherein the print head is an inkjet-type print  
        head, and the carriage assembly further comprises one or more wells in which  
        corresponding fluid capsules are insertable.  
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4. The portable printer of claim 2, wherein the motor is a worm-gear motor.
5. The portable printer of claim 2, wherein the mechanism comprises:  
        a watch-spring catch mechanism that winds to store sufficient energy to  
30    move the carriage assembly vertically; and  
        a drag-engage mechanism that winds the watch-spring catch mechanism  
        as the carriage assembly horizontally approaches an end of the portable printer.

6. The portable printer of claim 1, wherein each of the one or more rail units has a plurality of gear teeth to engage the carriage assembly.

5 7. The portable printer of claim 1, wherein the one or more rail units comprises a fixed rail unit and at least one movable rail unit, each of the at least one movable rail unit situated to a side of the fixed rail unit, such that the carriage assembly moves over the media horizontally substantially via the fixed rail unit and moves over the media vertically substantially via the at least one movable  
10 rail unit.

8. The portable printer of claim 7, wherein each of the at least one movable rail unit comprises a wire leaf spring to maintain alignment with the fixed rail unit.

15 9. The portable printer of claim 1, wherein the one or more rail units essentially consists of a fixed rail unit.

10. The portable printer of claim 1, wherein the portable printer is removably attachable to a docking station storing one or more batteries to power the  
20 portable printer.

11. A carriage assembly for a portable printer comprising:  
a carriage unit having a top surface and a bottom surface;  
a fluid-type print head disposed on the bottom surface of the carriage unit  
25 to print on a stationery media positioned within the portable printer;  
one or more wells in the top surface of the carriage unit and in which corresponding fluid capsules are insertable to supply fluid to the fluid-type print head;  
a motor coupled to the carriage unit to move the carriage assembly  
30 horizontally over the stationary media; and  
a mechanism coupled to the carriage unit to move the carriage assembly vertically over the stationary media.

12. The carriage assembly of claim 11, wherein each of the one or more wells is sufficiently small so that a human finger cannot be inserted therein.

5 13. The carriage assembly of claim 11, wherein each of the one or more wells has a cylindrical shape.

14. The carriage assembly of claim 11, wherein the mechanism comprises:  
a watch-spring catch mechanism that winds to store sufficient energy to  
10 move the carriage assembly vertically; and  
a drag-engage mechanism that winds the watch-spring catch mechanism as the carriage assembly horizontally approaches an end of the portable printer.

15. The carriage assembly of claim 11, further comprising a sharp edge on an  
15 inner surface of each of the one or more wells to open a corresponding fluid capsule upon insertion therein.

16. A maintenance package for a portable printer having a cover with an inside surface and a carriage assembly horizontally and vertically movably connected  
20 to the one or more rail units, the maintenance package comprising:  
a case positionable in an open position and a closed position; and  
one or more fluid capsules stored in the case and insertable into corresponding wells of the carriage assembly of the portable printer.

25 17. The maintenance package of claim 16, wherein a top part of the case snaps substantially airtight to a bottom part of the case in the closed position.

18. The maintenance package of claim 16, further comprising one or more wipes stored in the case for user self-service of the carriage assembly.

19. The maintenance package of claim 16, further comprising one or more wipes with dye reducer stored in the case for user self-cleaning after user self-service of the carriage assembly.

- 5 20. The maintenance package of claim 16, further comprising a replacement print head stored in the case for the carriage assembly.